

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

| | | | |
|---|--|--|----------------------|
| Applicant's or agent's file reference 64126 | FOR FURTHER ACTION | | See Form PCT/PEA/416 |
| International application No. PCT/US2004/043354 | International filing date (day/month/year) 24.12.2004 | Priority date (day/month/year) 24.12.2003 | |
| International Patent Classification (IPC) or national classification and IPC C08L101/00, C08K5/14, C08K5/3435, C08L23/06 | | | |
| Applicant DOW GLOBAL TECHNOLOGIES INC.et al. | | | |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> | | | |
| <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p> | | | |
| Date of submission of the demand 22.07.2005 | | Date of completion of this report 28.02.2006 | |
| Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016 | | Authorized Officer Bergmans, K Telephone No. +31 70 340-4189 | |



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2004/043354

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-13 as originally filed

Claims, Numbers

1-6 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☐ restricted the claims.
 - ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☒ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1,2,5,6 .

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement
- | | | |
|-------------------------------|-------------|---------|
| Novelty (N) | Yes: Claims | |
| | No: Claims | 1,2,5,6 |
| Inventive step (IS) | Yes: Claims | |
| | No: Claims | 1,2,5,6 |
| Industrial applicability (IA) | Yes: Claims | 1,2,5,6 |
| | No: Claims | |
2. Citations and explanations (Rule 70.7):
see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

**INTERNATIONAL PRELIMINARY REPORT
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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item IV

Lack of unity of invention

The Examining Division found that the application lacks unity within the meaning of Rule 13.1 PCT, because the following separate inventions or groups of inventions are not so linked as to form a single general inventive concept:

The common concept between claim 1 and the rest of the independent claims is a polymeric composition comprising a free radical reactive polymer, an organic peroxide, and a graftable stable organic free radical wherein the graftable stable organic free radical is characterised by the suppressing of the degradation of the polymer or the carbon-carbon crosslinking of the polymer.

Document D1 (WO02092561) discloses a polymeric composition comprising a free radical reactive polymer, an organic peroxide, and a graftable stable organic free radical.

All the technical features of the common concept as indicated above are known from document D1. Therefore, the application lacks unity of invention within the meaning of Rule 13(1) PCT. The especial technical features according to rule 13 (2) PCT which provide a contribution over the prior art are not so linked to form a unitary inventive concept. Claim 1 defines a polymeric composition comprising a free radical reactive polymer, an organic peroxide having a half-life (130 °C) longer than dicumyl peroxide, and a graftable stable organic free radical wherein the graftable stable organic free radical is characterised by the suppressing of the degradation of the polymer. Claim 2 defines a polymeric composition comprising a free radical reactive polymer, an organic peroxide having a half-life (130 °C) longer than dicumyl peroxide, and a graftable stable organic free radical wherein the graftable stable organic free radical is characterised by the suppressing of the carbon-carbon crosslinking of the polymer. Claim 3 defines a polymeric composition comprising a free radical reactive polymer, an organic peroxide subject to formation of methyl radicals to a lesser degree than dicumyl peroxide, and a graftable stable organic free radical wherein the graftable stable organic free radical is characterised by the suppressing of the degradation of the polymer. Claim 4 defines a polymeric composition comprising a free radical reactive polymer, an organic peroxide subject to formation of methyl radicals to a lesser degree than dicumyl peroxide, and a graftable stable organic free radical wherein the graftable stable organic free radical is characterised by the suppressing of the carbon-carbon crosslinking of the polymer.

Therefore the different inventions lead to different results. Consequently, the present set of claims breaks up in four inventions as follows:

Claims 1,5,6 : A polymeric composition comprising a free radical reactive polymer, an organic peroxide having a half-life (130 °C) longer than dicumyl peroxide, and a graftable stable organic free radical wherein the graftable stable organic free radical is characterised by the suppressing of the degradation of the polymer.

Claim 2,5,6 : A polymeric composition comprising a free radical reactive polymer, an organic peroxide having a half-life (130 °C) longer than dicumyl peroxide, and a graftable stable organic free radical wherein the graftable stable organic free radical is characterised by the suppressing of the carbon-carbon crosslinking of the polymer.

Claims 3,5,6 : A polymeric composition comprising a free radical reactive polymer, an organic peroxide subject to formation of methyl radicals to a lesser degree than dicumyl peroxide, and a graftable stable organic free radical wherein the graftable stable organic free radical is characterised by the suppressing of the degradation of the polymer.

Claims 4-6 : A polymeric composition comprising a free radical reactive polymer, an organic peroxide subject to formation of methyl radicals to a lesser degree than dicumyl peroxide, and a graftable stable organic free radical wherein the graftable stable organic free radical is characterised by the suppressing of the carbon-carbon crosslinking of the polymer.

There are four independent claims each one containing especial technical feature not linked by a common concept. Therefore, four different inventions can be identified. However, the examiner has grouped said four inventions in only two for the benefit of the applicant according to the following :

Claims 1,2,5,6 : A polymeric composition comprising a free radical reactive polymer, an organic peroxide having a half-life (130 °C) longer than dicumyl peroxide, and a graftable stable organic free radical wherein the graftable stable organic free radical is characterised by the suppressing of the degradation of the polymer or the suppressing of the carbon-carbon crosslinking of the polymer.

Claims 3-6 : A polymeric composition comprising a free radical reactive polymer, an organic peroxide subject to formation of methyl radicals to a lesser degree than dicumyl peroxide, and a graftable stable organic free radical wherein the graftable stable organic free radical is characterised by the suppressing of the degradation of the polymer or the suppressing of the carbon-carbon crosslinking of the polymer.

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

D1: WO02092561

Novelty (Art. 33 (2) PCT)

The document D1 discloses a polymeric composition comprising a free-radical reactive polymer, free-radical organic peroxide, and a graftable stable organic free radical wherein the graftable stable organic free radical is characterised by the suppressing of the degradation of the polymer or the suppressing of the carbon-carbon crosslinking of the polymer. The subject matter of claims 1,2,5,6 over D1 is considered to be not novel (Art. 33(2) PCT).

Inventive step (Art. 33(3) PCT)

All the technical features of the present claims are described in the document D1. Therefore the claims 1,2,5,6 do not involve an inventive step (Art. 33(3) PCT).

Re Item VII

Certain defects in the international application

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this documents identified therein.

The specification for an international application should be capable of being understood without reference to any other document (cf PCT Guidelines Ch. II 4.17). The expression "hereby incorporated by reference" found in the description are therefore not according to the PCT requirements. The specification for an international application should be capable of being understood without reference to any other document (cf PCT Guidelines Ch. II 4.17). The expression "hereby incorporated by reference" found in the description are therefore not according to the PCT requirements.

Re Item VIII

Certain observations on the international application

Clarity (Art. 6 PCT)

1. The relative term "substantially" used in claims 1 and 2 has no well-recognised meaning and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of said claim unclear (Article 6 PCT).

2. The claims of the present application are not supported by the description as required by Article 6 PCT. This inconsistency between the claims and the description leads to doubt concerning the matter for which protection is sought, thereby rendering the claims unclear.

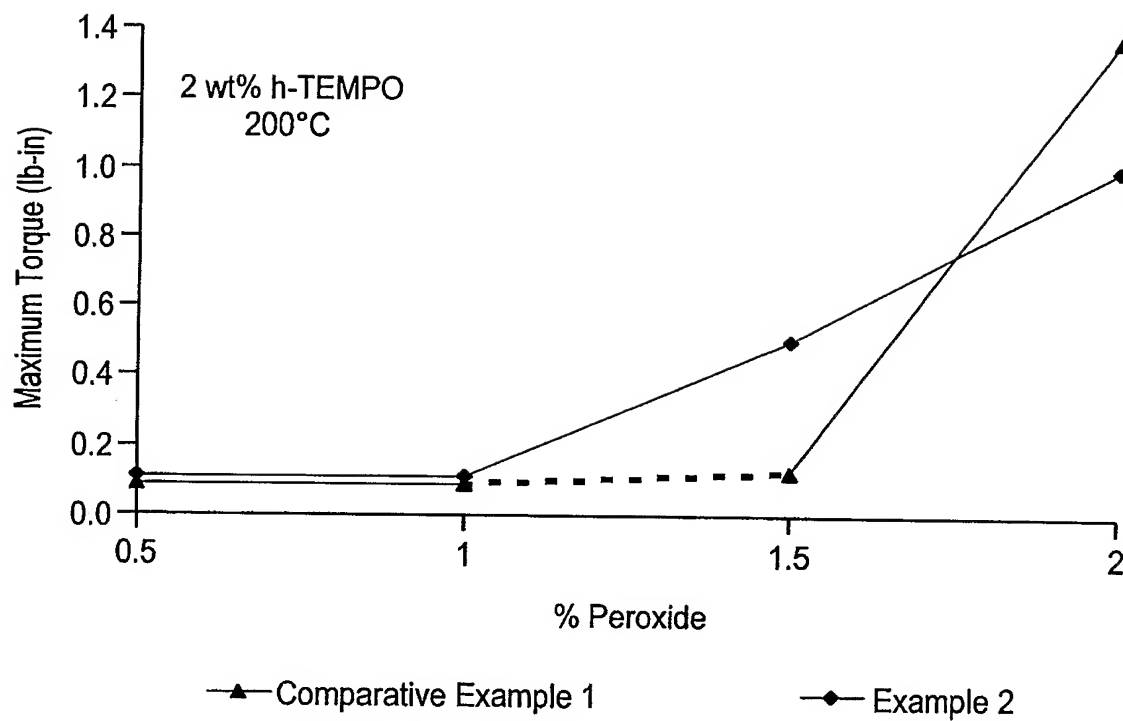
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FIG. 1



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FIG. 2

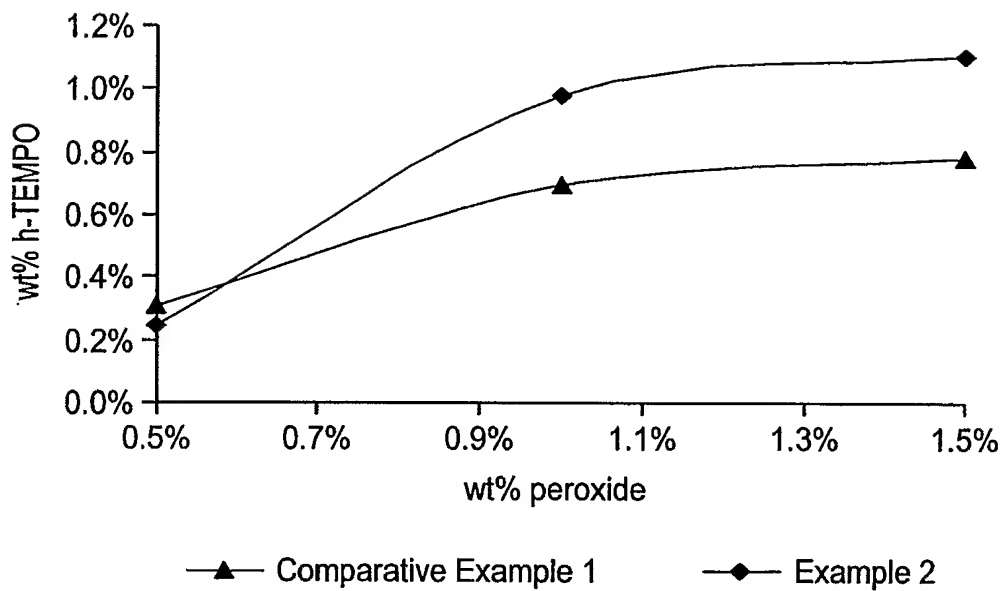


FIG. 3

